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ABSTRACT

The authors describe a Verified Vocational Counseling (VVC) Model which is a computer assisted program used to assist students in planning their career. Using the "Dictionary of Occupational Titles," job descriptions and qualifications were compiled for all 120 families of occupations. This information is matched, by the computer, with information about the student that is derived from a special instrument assessing aptitudes, interests, temperment, reactions to physical demands, and reactions to working conditions. Recognizing that much of a student's vocational exploration is guided by that student's subjective vocational estimates, the VVC Model includes two sections designed to measure students' self-estimates. This information is compiled in a computer printout that provides a starting point for counselor-client interviews. This document contains the Students' Self-Estimate questionnaire. (RWP)

ED 087958

A VERIFIED VOCATIONAL COUNSELING MODEL

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VERIFIED VOCATIONAL COUNSELING MODEL

Part I

THE CLIMATE OF URGENCY DEMANDED DELIMITATION

The Counseling Staff and the Data Processing Programmer at Victor Valley College approached the development of this Vocational Model with an urgency imposed by the fact that we are practitioners of counseling methodology. Being on the "front lines" of the Counseling "battle" imposes the climate of urgency in which we have worked, and out of which has come this Verified Vocational Counseling Model which we believe is an improvement over what colleges in general have been doing in the vocational counseling arena.

This climate of urgency demanded that we not only make decisions quickly but also that we implement them quickly. One decision was particularly urgent. We had to delimit the subject so we could get to work on it immediately. After this was done the rest seemed to easily fall into place. The Model did result in the necessary delimitation but it is still very comprehensive. It covers all 120 families of vocations listed in the Dictionary of Occupational Titles, thereby covering 100% of the 50,000 vocations in America.

Part II

SPECIFIC DELIMITING DECISIONS

The Verified Vocational Counseling Model accepted the U. S. Department of Labor Bureau of Employment Security's Classification of Occupations in America. The Model accepted the cut-off scores for each vocation as listed in the Bureau's Dictionary of Occupational Titles Volume II Occupational Classification. This is not to say that the Labor Department has all the answers on job descriptions and requirements. It is to say that the push of urgency forced the group to start somewhere and the DOT represented a very comprehensive beginning point -- a beginning which has the advantage of having the tremendous manpower, research and financial support of our federal government.

Part III

THE CRITERION IS COMPUTERIZED

Once the U. S. Labor Department's Classification and worker trait group requirements were accepted as our initial criteria, all of the requirements for all 120 families of occupations were programmed into the computer so that if all the requirement categories were known about each student, the computer could read the information about the student and search its immense memory storage to see which vocational families match his profile. Then it printed this information. It is so simple for the computer to digest, sort, and compare information. Later, the counselee and counselor can discuss the printouts and further explore the world of work.

One problem on the way to the completion of this Vocational Counseling Model was that there was not an instrument that could measure all 52 categories about each person and each family of occupations as listed or implied in the DOT. Therefore, we created an instrument that does this. The first 9 categories are the 9 aptitudes that are measured by the federal government's General Aptitude Test Battery (GATB). Questions 10 and 11 are blank since the Labor Department's research has shown these are not significant. The remaining 41 significant categories are measured by the inventory instrument that was built.

The U. S. Labor Department uses the GATB scores as they exist as either two or three digit numbers with a mean of 100 and a standard deviation of 20. This is not, however, the way the worker trait requirements are arranged. The DOT lists the worker traits as either 1, 2, 3, 4, or 5. Because of this, the GATB scores were converted on these first categories from two or three digit scores into 1, 2, 3, 4, or 5. The GATB was used for the first 9 categories and the students' scores were recorded on each aptitude as either a 1, 2, 3, 4, or 5. A "1" indicates that the student has scored within the top 10% of the general working population. A "2" indicates that he has scored within the top one-third of the general working population - exclusive of the top 10%.

The other information was obtained from the student as he read the Verified Vocational Counseling Model instrument and checked either yes or no to each of 41 statements.

When all 50 categories of information are listed on the VVCM Control Sheet, the following information is available for each student:

1. Aptitudes (questions 1-11; the first 9 converted from the GATB)
2. Interests (questions 12-21)
3. Temperament (questions 22-33)
4. Reactions to physical demands (questions 34-43)
5. Reactions to working conditions (questions 44-52)

Previous to the input of the student's Control Sheet, the computer has digested and memorized the same 5 kinds of information -- including the minimum cut-off scores -- that are

required for each vocational family. For example: Below is a reproduction of the DOT's Qualifications Profile for the field of Guidance and Counseling.

QUALIFICATIONS PROFILE

GED: 5 6
SVP: 7 8

Apt:	GVN.	SPQ	KFM	EC
	113	444	444	55
	22			

Int: 4 6 5 8
Temp: 5 9 4
Phys. Dem: S L 4 5 6

The computer memorizes that for the aptitude of "G-General Learning Ability" (listed as G-1, 2), a person could be either 1 or 2, but he must score at least within the 2 range. Also on "V-Verbal Aptitude" (listed as V-1, 2), he could be 1 or 2, but he must score at least within the 2 range. In terms of his interest, (Int: 4, 5, 6, 8), he must have indicated an interest for 4 -- that is

> "Situations involving a preference for working for people for their presumed good, as in the social welfare sense, or for dealing with people and language in social situations."

Similarly the DOT's requirements for this job family are given for temperament, physical demands and working conditions.*

Since the computer has memorized the job cut-off scores given in the DOT and since it has been fed similar information about a student, it can compare the student's profile of scores with the required scores for each of the 120 vocational families. Then it can be programmed to print-out a list of all these families for which the student qualifies, along with an appropriate narrative which the counseling staff has contributed.

CONCLUSION: Each DOT vocational family has a required profile of aptitude, interest, temperament, physical demands, and working conditions scores that a person must either meet or surpass in order to be well-qualified in all these 5 areas and, therefore, qualified for this job family. By using the VVCM instrument, it is possible to know these same 5 kinds of information about the student; obtain a profile using his aptitude, interest, temperament, physical demands, and working conditions scores. This profile is put on the VVCM Student Information Sheet and is fed into the computer. The computer prints out not only the list of vocations for which the student is qualified, but also produces the narrative.

*Working conditions are found in DOT Vol. III.

Part IV

THE STUDENT'S SELF-CONCEPT

The Counseling staff has recognized that guided vocational exploration is more than objectively matching a student's profile of scores with the appropriate vocational families. For clearly much of a student's vocational exploration is guided by that student's subjective, phenomenological perception, as well as his subjective vocational estimates. Consequently, the VVC Model includes a couple of sections designed to measure students' self-estimates. The student subjectively estimates his own aptitude level and his interest level. He estimates his level by the same descriptive scores and on the same 9 aptitudes that the GATB will objectively measure. Similarly, he subjectively estimates his vocational and college major interests from the same lists that the SRA's Kuder will objectively measure. Of course, any list could be used. In the Counseling session, the similarity and differences between student's self-estimate of his aptitudes and interests and the objective measures of these can be explored.

In this way, part of the student's subjective self-concept can be compared with objective measures of these same elements of his self-concept. Plans include the expansion of more elements of the student's self-concept to be measured in this way, both subjectively and objectively.

Plans include the student's self-estimate of his vocational family listing being obtained. This subjective estimate could be compared to the objective estimate. A way to obtain the student's subjective estimate is to allow him to go through a stack of cards, each of which had the name of a particular vocational family and a description of the work performed in that vocation. He could sort these by a number of different criteria. But most easily and most consistently, he could sort them by the criteria the DOT uses. He could sort them on the basis of his subjective view of his aptitudes, interests, temperament, physical demands, and working conditions.* In this way more elements of his subjective self-concept could be both subjectively and objectively measured and later explored within the counseling sessions. In addition, elements of the student's self-perception could be explored by asking him to pick from the stack of cards the vocations he would <u>most like</u> to consider.

The ones he <u>hopes</u> he can qualify for that is the <u>ideal</u> vocations he sees himself possibly going into. Plans include the counseling exploration of these and other elements of the student's self-concept as they relate to objective measures of the same elements.

Part V

THE STUDENT'S MOTIVATIONAL QUOTIENT

The VVC Model has been written to include an adjustment of data on the basis of the student's motivational drive. This adjustment is hereby defined under the heading of applying

*This card-sort technique has been initiated and the card stack has already been created.

the student's "Motivational Quotient".

The Motivational Quotient or MQ shall be defined as follows:

$$\text{Motivational Quotient} = \frac{\text{Actual Performance Level}}{\text{Predicted Performance Level}} \times \frac{100}{1}$$

It is defined as the product of:

1. the ratio of the student's actual performance level to his predicted performance level, and

2. 100.

This latter manipulation will convert the fraction or decimal to a more manageable number. If, for example, the student's performance level is the same as his predicted performance level, this ratio would be 1; and the MQ (Motivational Quotient) would then be 100. If a student's actual performance level exceeded his predicted performance level, the ratio would be greater than 1 and the MQ would be greater than 100. Conversely, if the student's actual performance level was exceeded by his predicted performance level, then the ratio would be less than 1 and the MQ (Motivational Quotient) would be less than 100.

The basic principle here is that since the student's predicted performance level is not always exactly the same as his actual performance level, allowance must be made for individualized adjustments to include this fact.

An important intention of using the student's MQ in the counseling sessions is to use it to inspire him, i.e., increase his motivational drive.

Appendix I

Verified Vocational Counseling

Name _____ Date _____

Part I

Student's Self-Estimate

This section is devoted entirely to you and how you see your aptitudes.

The Federal Government has isolated the following nine aptitudes that are important in different degrees in various occupations:

G - General Learning Ability

V - Verbal Aptitude

N - Numerical Aptitude

S - Spatial Aptitude

P - Form Perception

Q - Clerical Perception

K - Motor Coordination

F - Finger Dexterity

M - Manual Dexterity

After you have read the complete definition of each of these aptitudes, indicate which degree of proficiency you have by choosing A, B, C, D, or E. For example: In marking your answer for number 1, G - General Learning Ability, if you believe you are in the top 10% of the working population in this aptitude, check A. If you believe that you are in the average range (33-67%) in number 3 - N - Numerical Aptitude, then check C for number 3. Here is the scale in more precise terminology:

A (90-100%) The top 10 percent of the population. This segment of the population possesses an extremely high degree of the aptitude.

B (67-90%) The highest third exclusive of the top 10 percent of the population. This segment of the population possesses an above average or high degree of the aptitude.

C (33-67%) The middle third of the population. This segment of the population possesses a medium degree of the aptitude, ranging from slightly below to slightly above average.

D (10-33%) The lowest third exclusive of the bottom 10 percent of the population. This segment of the population possesses a below average or low degree of the aptitude.

E (0-10%) The lowest 10 percent of the population. This segment of the population possesses a negligible degree of the aptitude.

On the following questions, locate the level of your aptitude by marking A, B, C, D, or E on each of these 9 aptitudes.

____1 - G - General Learning Ability. The ability to "catch on" or understand instructions and underlying principles; the ability to reason and make judgments. Closely related to doing well in school.

a. I would be 90-100% in this aptitude (the top 10%)
b. I would be 67-90% in this aptitude (the highest third exclusive of the top 10%).
c. I would be 33-67% in this aptitude (the middle third).
d. I would be 10-33% in this aptitude (the lowest third exclusive of the bottom 10%)
e. I would be 0-10% in this aptitude (the lowest 10%)

____2 - V - Verbal Aptitude. The ability to understand meaning of words and to use them effectively. The ability to comprehend language, to understand relationships between words and to understand meanings of whole sentences and paragraphs.

a. I would be 90-100% in this aptitude (the top 10%).
b. I would be 67-90% in this aptitude (the highest third exclusive of the top 10%).
c. I would be 33-67% in this aptitude (the middle third).
d. I would be 10-33% in this aptitude (the lowest third exclusive of the bottom 10%).
e. I would be 0-10% in this aptitude (the lowest 10%).

____3 - N - Numerical Aptitude. Ability to perform arithmetic operations quickly and accurately.

a. I would be 90-100% in this aptitude (the top 10%).
b. I would be 67-90% in this aptitude (the highest third exclusive of the top 10%).
c. I would be 33-67% in this aptitude (the middle third).
d. I would be 10-33% in this aptitude (the lowest third exclusive of the bottom 10%).
e. I would be 0-10% in this aptitude (the lowest 10%).

____4 - S - Spatial Aptitude. Ability to think visually of geometric forms and to comprehend the two-dimensional representation of three-dimensional objects. The ability to recognize the relationships resulting from the movement of objects in space.

a. I would be 90-100% in this aptitude (the top 10%).
b. I would be 67-90% in this aptitude (the highest third exclusive of the top 10%).
c. I would be 33-67% in this aptitude (the middle third).
d. I would be 10-33% in this aptitude (the lowest third exclusive of the bottom 10%).
e. I would be 0-10% in this aptitude (the lowest 10%).

____5 - P - Form Perception. Ability to perceive pertinent detail in objects or in pictorial or graphic material. Ability to make visual comparisons and discriminations and see slight differences in shapes and shadings of figures and widths and lengths of line.

a. I would be 90-100% in this aptitude (the top 10%).
b. I would be 67-90% in this aptitude (the highest third exclusive of the top 10%).
c. I would be 33-67% in this aptitude (the middle third).
d. I would be 10-33% in this aptitude (the lowest third exclusive of the bottom 10%).
e. I would be 0-10% in this aptitude (the lowest 10%).

____6 - Q- Clerical Perception. Ability to perceive pertinent detail in verbal or tabular material. Ability to observe differences in copy, to proofread words and numbers, and to avoid perceptual errors in arithmetic computation.

a. I would be 90-100% in this aptitude (the top 10%).
b. I would be 67-90% in this aptitude (the highest third exclusive of the top 10%).
c. I would be 33-67% in this aptitude (the middle third).
d. I would be 10-33% in this aptitude (the lowest third exclusive of the bottom 10%).
e. I would be 0-10% in this aptitude (the lowest 10%).

____7 - K - Motor Coordination. Ability to coordinate eyes and hands or fingers rapidly and accurately in making precise movements with speed. Ability to make a movement response accurately and swiftly.

a. I would be 90-100% in this aptitude (the top 10%).
b. I would be 67-90% in this aptitude (the highest third exclusive of the top 10%).
c. I would be 33-67% in this aptitude (the middle third).
d. I would be 10-33% in this aptitude (the lowest third exclusive of the bottom 10%).
e. I would be 0-10% in this aptitude (the lowest 10%).

____8 - F - Finger Dexterity. Ability to move the fingers, and manipulate small objects with fingers, rapidly or accurately.

a. I would be 90-100% in this aptitude (the top 10%).
b. I would be 67-90% in this aptitude (the highest third exclusive ov the top 10%).
c. I would be 33-67% in this aptitude (the middle third).
d. I would be 10-33% in this aptitude (the lowest third exclusive of the bottom 10%).
e. I would be 0-10% in this aptitude (the lowest 10%).

____9 - M - Manual Dexterity. Ability to move the hands easily and skillfully. Ability to work with the hands in placing and turning motions.

a. I would be 90-100% in this aptitude (the top 10%).
b. I would be 67-90% in this aptitude (the highest third exclusive of the top 10%).
c. I would be 33-67% in this aptitude (the lowest third exclusive of the bottom 10%).
e. I would be 0-10% in this aptitude (the lowest 10%).

____10. - Skip this question.

____11. - Skip this question.

Part 2 - Interests

Directions: Please make an "X" under the "Yes" column if you sincerely have an interest in situation described on the right. Make an "x" under the "No" Column, if you do not have an interest in the situation described at the right:

	Yes (a)	No (b)	
12.	___ (yes)	___ (no)	12. Situations involving a preference for activities dealing with things and objects.
13.	___ (yes)	____ (no)	13. Situations involving a preference for activities involving business contact with people.
14.	___ (yes)	___ (no)	14. Situations involving a preference for activities of a routine, concrete, organized nature.
15.	___ (yes)	____ (no)	15. Situations involving a preference for working for people for their presumed good, as in the social welfare sense, or for dealing with people and language in social situations.
16.	___ (yes)	____ (no)	16. Situations involving a preference for activities resulting in prestige or the esteem of others.
17.	___ (yes)	___ (no)	17. Situations involving a preference for activities concerned with people and the communication of ideas.
18.	___ (yes)	___ (no)	18. Situations involving a preference for activities of a scientific and technical nature.
19.	___ (yes)	____ (no)	19. Situations involving a preference for activities of an abstract and creative nature.
20.	___ (yes)	___ (no)	20. Situations involving a preference for activities that are nonsocial in nature, and are carried on in relation to processes, machines and techniques.
21.	___ (yes)	___ (no)	21. Situations involving a preference for activities resulting in tangible, productive satisfaction.

Part 3 - Preference for Certain Occupational Situations

Directions: Please make an "x" under the "yes" column if you would, by choice, choose the given occupational situation. Make an "x" under the "no" column if you would not choose it.

	Yes (a)	No (b)	
22.	___ (yes)	___ (no)	22. Situations involving a variety of duties often characterized by frequent change.
23.	___ (yes)	___ (no)	23. Situations involving repetitive or short cycle operations carried out according to set procedures or sequences.
24.	___ (yes)	___ (no)	24. Situations involving doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.
25.	___ (yes)	___ (no)	25. Situations involving the direction, control, and planning of an entire activity or the activities of others.
26.	___ (yes)	___ (no)	26. Situations involving the necessity of dealing with people in actual job duties beyond giving and receiving instructions.
27.	___ (yes)	___ (no)	27. Situations involving working alone and apart in physical isolation from others, although the activity may be integrated with that of others.
28.	___ (yes)	___ (no)	28. Situations involving influencing people in their opinions, attitudes, or judgments about ideas or things.
29.	___ (yes)	___ (no)	29. Situation involving performing adequately under stress when confronted with the critical or unexpected or when taking risks.
30.	___ (yes)	___ (no)	30. Situations involving the evaluation (arriving at generalizations, judgments, or decisions) of information against sensory or judgmental criteria.
31.	___ (yes)	___ (no)	31. Situations involving the evaluation (arriving at generalizations, judgments, or decisions) of information against measurable or verifiable criteria.
32.	___ (yes)	___ (no)	32. Situations involving the interpretation of feelings, ideas, or facts in terms of personal viewpoint.
33.	___ (yes)	___ (no)	33. Situations involving the precise attainment of set limits, tolerances, or standards.

Part 4 - Physical Demands

	Yes (a)	No (b)	
34.	___ (yes)	___ (no)	34. I prefer work that requires only very light lifting (10 lbs. max.).
35.	___ (yes)	___ (no)	35. I would be willing to do work requiring lifting of 20 lbs., and considerable walking or standing.
36.	___ (yes)	___ (no)	36. I would be able and willing to lift weights of 50 lbs. or carry objects weighing 25 lbs.
37.	___ (yes)	___ (no)	37. I would be able and willing to lift 100 lb. loads and carry objects weighing 50 lbs.
38.	___ (yes)	___ (no)	38. I am able and willing to lift very heavy objects (over 100 lbs.)
39.	___ (yes)	___ (no)	39. I would be willing and able to carry out job activities involving climbing and balancing.
40.	___ (yes)	___ (no)	40. I would be willing and able to carry out job activities involving stooping, kneeling, crouching, or crawling.
41.	___ (yes)	___ (no)	41. I would be willing and able to carry out job activities involving reaching, handling objects, feeling textures, temperatures, etc., and able to work with my fingers in handling very small objects.
42.	___ (yes)	___ (no)	42. I am able to hear and talk as well as most people.
43.	___ (yes)	___ (no)	43. I am able to see as well as most people. (Including judging distance and ability to identify colors correctly).
44.	___ (yes)	___ (no)	44. I would be willing to work inside 75% of the time.
45.	___ (yes)	___ (no)	45. I would be willing to work outside 75% of the time.
46.	___ (yes)	___ (no)	46. I would be willing to work inside and outside on the same job. (about half and half.)
47.	___ (yes)	___ (no)	47. I would be willing and able to work in extreme cold or changeable temperatures.
48.	___ (yes)	___ (no)	48. I would be willing and able to work in extremes of heat and changeable temperatures.
49.	___ (yes)	___ (no)	49. I would be willing and able to work in humid or wet environment.
50.	___ (yes)	___ (no)	50. I would be willing to work in conditions of extreme noise and vibration.

Yes (a)	No (b)	
51. ___ (yes)	___ (no)	51. I would be willing to work at a job in which I would have to risk bodily injury.
52. ___ (yes)	___ (no)	52. I would be willing to work in environments which include fumes, odors, toxic conditions, dust or poor ventilation.